

REMARKS

The Examiner is thanked for the due consideration given the application.

Claims 1, 2, 4-15 and 17-21 are pending in the application. The amendments to independent claims 1 and 17 find support in the drawing figures and in the specification at page 7, lines 14-22.

No new matter is believed to be added to the application by this amendment.

Rejections Based on SCHAD

Claims 1, 2, 4, 6, 7 and 9-15 have been rejected under 35 USC §103(a) as being unpatentable over SCHAD (U.S. Patent 5,769,021) in view of GOETZ (U.S. Patent 3,344,448). Claims 5, 8 and 17-21 have been rejected under 35 USC §103(a) as being unpatentable over SCHAD in view of GOETZ, and further in view of PAVON et al. (U.S. Publication 2002/0017229). These rejections are respectfully traversed.

The present invention pertains to a retractable nose assembly for an amphibious vehicle that is illustrated, by way of example, in Figure 1 of the application, which is reproduced below.

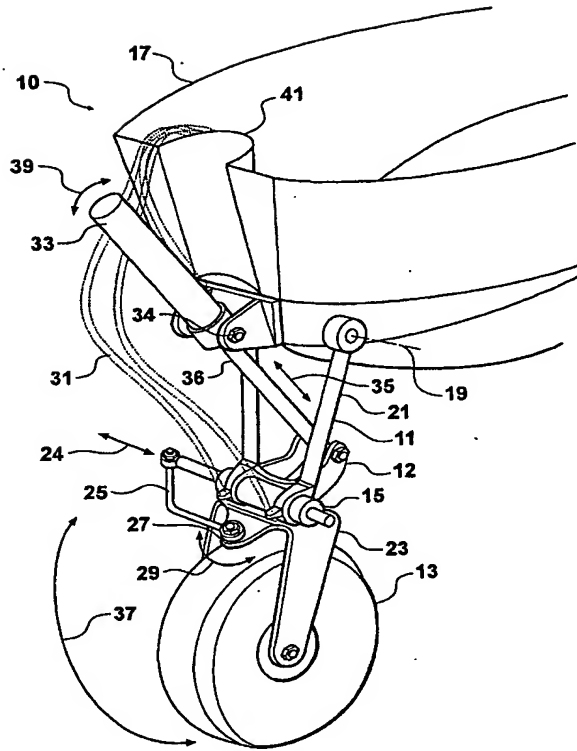


Figure 1

In the present invention, a nose leg assembly includes an adapter fitting. The leg and actuator are both connected to the fitting to produce a compact assembly that can be fitted to the hull of an amphibious vehicle as an assembly. In addition, the actuator is pivotally connected to the fitting at its rod end which allows it to follow the leg to a greater extent, making a large arc of travel of the leg possible.

As instantly set forth in independent claims 1 and 17, "a linear actuator that is pivotally connected with a pivotal connection . . . the pivotal connection of the actuator when extended, is located in front of the leg assembly." This is supported by the drawing figures and the specification at page 7,

lines 14-22. The "pivotal connection" is labeled as actuator 34 and rod 36 rotates about bracket 12 on leg 11 in Figure 1, above.

Instant claims 1 and 17 also set forth "the actuator traveling in a recess provided in the hull," which is supported at page 7, lines 20-22 of the specification. This recess of the present invention is specifically designed, for the actuator 34 is not present in the cited prior art.

The unexpected advantages of the assembly, which includes these features, can be summarized as follows:

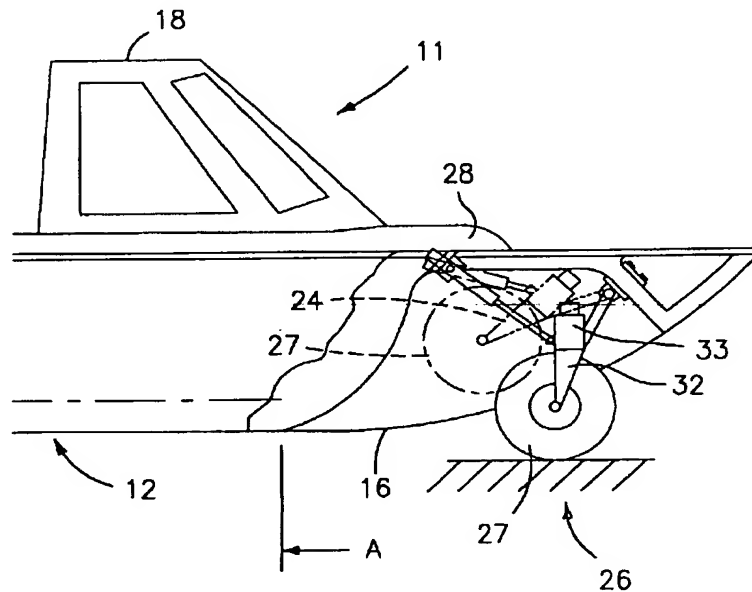
A. The assembly can be fitted to the hull of a vehicle without the need for significant modification or local strengthening of attachment points. The reaction loads between the actuator and the leg can be resisted by the fitting rather than transferring these loads into the hull.

B. The assembly provides a configuration that can move the leg through a wide range of movement, i.e., greater than 120 degrees (see claim 5), without the need for a very long or a very powerful actuator since the actuator can pivot about its mounting location to maintain an effective crank angle relative to the movement of the leg throughout the majority of the range of movement of the leg.

C. The wide range of movement provided allows the leg assembly to be fitted to the exterior of the bow of a vehicle, and the wheel can be moved in one direction to a location that is useful for supporting the vehicle on the ground, and the wheel

can be moved to a position well above the waterline of the vehicle for operations on water. The leg assembly allows stowage of the wheel without the need to provide a separate wheel well, and without the need to provide movable doors or fairings through which the wheel must pass.

SCHAD pertains to an amphibious vehicle that includes a retractable leg and a balloon tire, as is illustrated in Figure 1, a portion of which is reproduced below.



SCHAD fails to teach a pivotal connection of an actuator that when extended, is located in front of the leg assembly. SCHAD also fails to teach the actuator travelling in a recess provided in the hull. SCHAD further fails to teach the use of an adapter fitting to form a nose leg assembly. SCHAD

additionally fails to teach a nose mounted wheel assembly that is mounted outside the hull.

That is, the wheel assembly of SCHAD is mounted within the hull and not outside of it or, more accurately, the wheel assembly of SCHAD is located within the streamline part of the hull. In contrast, the present invention has movement of the nose assembly from extension to retraction (and vice versa) being external to the hull streamline and external to the skin portion. SCHAD instead teaches a nose leg assembly that is connected to the hull of the amphibious vehicle at two distinct locations. The SCHAD leg assembly requires a purposely built, or a significantly redesigned and strengthened, bow area of the vehicle, while the present invention can be used on a conventional boat hull that has been modified to a much lesser extent.

In addition to the significantly reduced requirements for bow redesign and strengthening, the present invention provides a leg assembly that is able to pivot the nose leg through a significantly greater range of movement. The leg assembly of SCHAD clearly only needs to move through an arc of about 45 degrees. In contrast, the nose leg of the present invention is able to move through an arc of over 120 degrees (see claim 5).

The Official Action asserts that the claimed invention includes functional language that is inherently met by SCHAD.

However, as has been noted in the previous response, any purported inherency is no bar to patentability.

The Official Action acknowledges that SCHAD fails to teach a leg being outside a streamline of the hull. The Official Action turns to GOETZ for these teachings.

However, GOETZ fails to teach or infer a linear actuator with a pivotal connection that when actuator is extended, is located in front of the leg assembly, or the actuator traveling in a recess in the hull, such as in instant claims 1 and 17 of the present invention.

The Official Action acknowledges that SCHAD fails to disclose movement through 120 degrees and a stop. The Official Action turns to PAVON et al. for these teachings.

The wheel assemblies of PAVON et al. are mounted in recesses formed in the sides of the hull, as can be seen in Figure 2 of the reference, reproduced below.

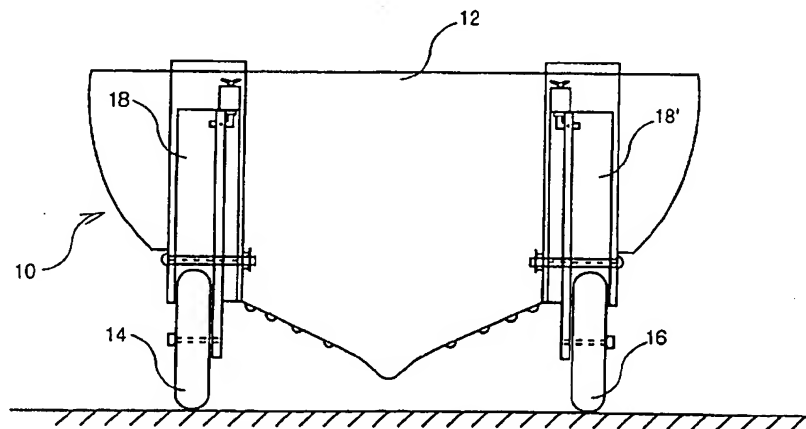


FIG. 2

This technology clearly fails to pertain to nose leg assembly, such as is set forth in independent claims 1 and 17 of the present invention. Further, there is no teaching or suggestion in the Abstract of PAVON et al. of 120 degrees arc. Although extended and retracted positions are indicated in Figures 4 and 5 of PAVON et al., there is no indication of the degrees of arc or that the drawing figures are drawn to scale so that the degrees of arc can be measured.

PAVON et al. additionally fail to teach or infer a linear actuator with a pivotal connection that when actuator is extended, is located in front of the leg assembly, or the actuator traveling in a recess in the hull, such as in instant claims 1 and 17 of the present invention.

One of ordinary skill and creativity would thus fail to produce a claimed embodiment of the present invention from a knowledge of SCHAD and GOETZ or a knowledge of SCHAD, GOETZ and PAVON et al. A *prima facie* case of unpatentability has thus not been made from SCHAD and PAVON et al.

Further, even if one assumes *arguendo* that unpatentability could be alleged, this unpatentability would be fully rebutted by the unexpected advantages of the present invention, which have been discussed above.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The Examiner is thanked for considering the Information Disclosure Statement filed March 27, 2006 and for making an initialed PTO-1449 Form of record in the application.

Prior art cited but not utilized is believed to be non-pertinent to the instant claims.

It is believed that the rejections have been overcome, obviated or rendered moot and that no issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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